Occupational Health and Safety
Sector Partnership Final Report

Submitted to Saskatchewan Learning

By the OHS Sector Partnership Steering Committee

March 31, 2005

1.0 Acknowledgements

The Building Capacity in Occupational Health and Safety Sector Partnership wishes to express an appreciation to all organizations, associations, consultants and individuals who have contributed time and effort to make this partnership successful.

This report and a number of successful initiatives and projects of the OHS Partnership would not have been possible without the participation of many individuals who contributed to the sector needs assessment and program development processes. A special thanks to the Saskatchewan Institute of Applied Science and Technology (SIAST) Nursing Division and the Planning, Research and Development Division, and the various partnership sub-committees for the development of the OHS Practitioner Program.

Saskatchewan Learning through the Sector Partnership Initiative was the main source of funds for this Partnership. Saskatchewan Labour also provided direct funding to various projects. The role of Saskatchewan Learning and Saskatchewan Labour are gratefully recognized and while both departments were involved in the project, the views expressed in the final report are those of the OHS sector.

2.0 Executive Summary

Introduction

In March 2001, Saskatchewan Labour and the University of Regina completed a report entitled "*Occupational Health & Safety Education and Training Programs in Saskatchewan - Bridging Options for Human Resource Development*". The report stated that "Saskatchewan would benefit from the implementation of a systemic, made in Saskatchewan OHS education and training model and that a consultation process should be undertaken to build consensus regarding the development of a model." The subsequent stakeholder consultation, with over 30 stakeholders participating, recommended that a provincial advisory group be established and a needs assessment be undertaken to identify specific education and training gaps, and to explore other options to develop this emerging OHS sector. Saskatchewan Labour documented the results of the consultation process in "*Building OHS Capacity: Options for OHS Education and Training in Saskatchewan*" in March 2002.

This project began in November, 2002 with the initial grant from Saskatchewan Learning as part of the Jobstart/Future Skills Sector Partnership development program. In 2003, Sask Labour contributed funding to the project. In 2004, SIAST also contributed to fund PLAR assessment tools. The total direct budget for the project was also supplemented with considerable in-kind contributions from the various partners.

Due to the extensive scope of this project which went from an initial needs assessment to development of a post-secondary credit program at SIAST, the project was extended through to March, 2005. The project is now complete, and went well beyond the initial objectives.

This project successfully completed the following objectives:

- Completed a needs analysis/assessment that includes:
  - a review of available literature; and
  - a training gap analysis.
- Developed recommendations and strategies for future direction based on the key findings and results of the needs analysis.
- Developed a post-secondary credit program at SIAST which included:
  - Curriculum materials and assessment tools;
  - PLAR process and assessment tools;
- Developed and strengthened a sustainable sector partnership that fosters continuous learning and implements strategies for long-term strategic planning:
  - Communication strategy developed including a sector newsletter which was developed and distributed to all stakeholders;
  - OHS Website Directory was developed to provide on-going information and to link partners web-sites;
  - Additional research with youth in a "Youth Environmental Scan" to determine ways to include youth in the next stages of development in this sector.

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Literature Review

A literature review was completed as part of the initial need assessment. This review focused on exploring the key issues identified in the literature for the emerging field of occupational health and safety, examining current models of OHS systems, and reviewing the current system of education and training in the field along with some specific providers of training.
The following are the key findings from the literature review.

- OHS is a complex occupation. Today, OHS practitioners must acquire a wide range of skills and knowledge from accident control, risk management and ergonomics, to an understanding of health issues such as chemical exposure and psychosocial stressors. Contributing to the increasing complexity of the OHS occupation is the changing context in which these duties are performed. Significant changes have occurred in technology, employee demographics, industry sector mix and the availability, type and design of work. Each of these changes has had a significant impact on the health and safety of the workers.
- A number of challenges regarding the prerequisite skills and knowledge of OHS practitioners are rapidly evolving including:
  - The emergence of a restructured labour market that includes pervasive use of technology, new management and human resource management practices and the growth of knowledge-intensive and service industries;
  - Though the link is still strongest that it is the actual physical demands of work such as repetitive motions that produce injury, there is growing conclusive evidence of a link between psychosocial factors and workplace musculo-skeletel disorders (WMSD);
  - Occupational health committees play an important role in improving workplace health and safety as long as key factors that allow such committees to be effective exist. Simply mandating committees is unlikely to have much effect at workplaces where the workplace responsibility system and the co-management of health and safety matters are not embraced by management and labour. This creates an important, and in some cases, additional role for OHS practitioners to play;
  - Work conditions affect health in a variety of pervasive and non-disease-specific ways, across a wide range of physical and mental outcomes.
- Complex, integrated systemic OHS models, emphasizing employee's physical safety, rather than health and workplace illness, have evolved based on the positive experiences of successful safety organizations. However, many organizations are still not utilizing these more sophisticated models. OHS practitioners must develop the "know how" to implement such systems.
- Management commitment, line ownership and worker involvement are the fundamental drivers of safety. OHS education programs must be increasingly aimed at improving OHS management and supervisory skills.
- A number of educational institutions in Canada are offering diploma and degree level programming to students and OHS practitioners at much higher levels than are occurring in Saskatchewan.

Needs Assessment

The next step in the project was conducting a needs assessment with key stakeholders. This primary research was conducted by Insightrix, the online service bureau of Innovation Consulting Group in Saskatoon. Three key audiences were surveyed:

- OHS practitioners - all current students and graduates of the University OHS Certificate Program, those who attended OHS seminars and/or those practitioners with a Canadian Registered Safety Professional (CRSP) designation
- Employers - categorized by organization size, location and industry sector
- OHC co-chairs - categorized by employee/employer, organization size, location and industry sector

The survey instrument used for each targeted audience was carefully developed by Insightrix, working closely with the Advisory Group, Saskatchewan Labour, Saskatchewan Learning and SIAST. Key informant interviews were also conducted with a number of organizations that have a large financial investment or mandate in OHS. The organizations were comprised of large private sector companies, industry and community-based safety associations, privately owned safety vendors, various public sector agencies, and the Saskatchewan Federation of Labour's OHS committee.

Key results of the needs assessment:

Access

- OHS practitioners, both CRSPs and OHS Certificate students/graduates, are highly interested in attaining academically credentialed education and training;
- Committee co-chairs also display a high level of interest in furthering their training in OHS.
- Employers are recognizing the need for academically credentialed OHS practitioners. Employers also want to have more customized training available for their industry and to access specialized and advanced expertise in a number of OHS fields.
- The online delivery of OHS education and training was of interest to a high proportion of those surveyed and interviewed:
- Approximately 70% of the OHS Certificate students/graduates and CRSP respondents indicate that they would like to access online education and training.
- The OHC co-chairs (90%) would participate in online education and training if it were available.
- Employers also support online learning (37.3% agree they would use OHS online distance education, if it were available as a training alternative).

Coordination and Coherency of the OHS System

In Saskatchewan, the lack of an OHS career pathway is an obstacle to the development of OHS practice. An OHS career pathway, especially for those who have made long time commitments to OHS practice, is not well defined. The literature review reveals that the OHS education and training and human resource system are characterized by a number of credentials awarded by industry associations, safety associations and academic institutions.

- Both OHS Certificate student/graduate and CRSP survey respondents indicate that they themselves do not understand the educational qualifications that advance OHS careers, nor do employers.
- The key informant interviews and employer survey results indicate there is a growing recognition among employers and practitioners of a university OHS certificate as a requirement for practice. Also, employers are encouraging their OHS personnel to obtain a post-secondary credential by providing monetary funds for tuition and books.
- A majority of the key informants say the OHS human resource development system needs to work together in a more coordinated manner so that employers, safety associations and academic institutions do not develop multiple, overlapping credentials and programs.

Recognition of OHS Practitioners' Prior Learning

The introduction of a prior learning assessment and recognition (PLAR) system into OHS practice received a high level of support from those interviewed and surveyed. The key informants unanimously support PLAR on the condition that the PLAR system will fairly, consistently and accurately assess critical competencies possessed by OHS practitioners.

Similarly, 74.7% of the OHS Certificate students/graduates and CRSPs also support PLAR, as they believe the application of PLAR is an important tool, which will assist them to advance their careers.

Basic Entry-Level Post-Secondary Applied Certificate

A basic entry-level post-secondary applied OHS certificate that serves as the first step on the OHS career ladder is strongly supported. There is a high level of support for an entry-level certificate among the key informants, employers, OHC co-chairs and OHS practitioners:

- Almost all of the key informants support the creation of an entry-level certificate that is inclusive of OHS practitioners' experiential learning, provided that standards and assessment of this learning is high quality.
- Employers support the development of an entry-level certificate as 51% think it is important to develop the certificate.
- Students/graduates also say that an entry-level certificate should be developed. When asked to rank six types of OHS programming in terms of priority for receiving increased education and training investment, an entry-level certificate was ranked the first priority by OHS Certificate students/graduates and second by CRSPs.
- The OHC co-chairs also support the development of an entry-level certificate with 60.2% of the co-chairs indicating it is an important or very important step.

Diploma/Degree Program

The development of a university level OHS diploma/degree program will provide a middle step on the career ladder for OHS practitioners. All of the stakeholders in the study agree that higher-level programming aimed at supervisors and managers of an OHS systems is another priority. Some key informants and OHS practitioners support a made in Saskatchewan OHS program rather than the continuation of the University of Alberta certificate program in the province.

Quality

Development of consistent standards for the content and delivery of OHS education and training is deemed important by almost all stakeholders in the OHS system:

- Of the students/graduates surveyed, approximately 90% believe that consistent standards for delivery and content need to be developed.
- Employer and co-chair satisfaction ratings of the different training providers, average about 70% favorable, indicating room for improvement and growth among all providers.
- Key informants also raise concerns about liability risk. With many organizations employing OHS practitioners with various OHS credentials, it is very important that courts recognize OHS practitioners as expert witnesses.

Demand/Supply

OHS program content areas of the OHS university certificate program that need renewed curriculum development are:

- Employability skills such as teamwork, conflict resolutions and problem solving (soft skills)
- Management of safety systems
- Ergonomics
- Safety supervision
- Environmental management
- Psychosocial factors and job stress
- Risk management

These changes are supported by the OHS graduates. Each of the above content areas display a significant discrepancy compared to the level of the skill required to be a successful practitioner.

Stress, harassment, violence and the impact of psychosocial factors in workplace strain, trauma and injury need much greater attention. The connections and relationships among stress, workload and supervision/management skills are not well understood by employers, according to some key informants. Also, of the OHS practitioners surveyed, 20% do not feel their education and training has prepared them for dealing with these issues and another 16.5% are neutral. OHS programs of all types must develop content and learning strategies to address these issues. Post-secondary education academic curricula should also create a specialized course related to these issues.

Employers and practitioners both identify that education and training opportunities for managers of OHS systems are in short supply. The key informants also indicate that there is insufficient education and training for OHS practice regarding the management of strategic and comprehensive OHS systems. University programming should be developed to address this major gap in the system.

Resources

All of the stakeholders in the OHS system demonstrate a great deal of willingness to develop partnerships and collaboration to strengthen the OHS system. Areas for future action include:

- Develop an inclusive model career pathway for OHS practitioners that connects the experiential, work-based system to the academic system;
- Establish a role clarification process with the goal of creating a more collaborative, integrated OHS system;
- Set up an information clearinghouse containing OHS information, courseware and resources.

Results of Building Capacity in OHS Sector Partnership

1. SIAST Occupational Health and Safety Practitioner Program

Based on the recommendations of the needs assessment, a post-secondary credit program at SIAST was initiated, approved, developed and delivered once in a pilot offering.
SIAST approved this new applied certificate program with six courses and a total of 17 credit units (256 hours of instruction).

The following curriculum was produced from the funding of this project:

- Detailed course outlines and course materials for students;
- Additional course materials for instructors in instructor manuals;
- All course assessment instruments;
- PLAR assessment instruments and process (using funding from SIAST PLAR fund).

The program is comprised of the following six courses:

EDUC 182	Principles and Practices of Adult Learning
HLTH 180	Risk Analysis and Hazard Control
HLTH 181	Occupational Health and Safety Programming
PCOM 180	Communication Strategies
PRAC 189	Practicum
SFTY 191	Safety Systems

The curriculum developed included:

- Development of course outlines, instructor guides, tests and PLAR assessment tools;
- Designing a system to maximize laddering or credit transfer among potential providers including Sask Labour (for OHS training) and other post-secondary institutions in Canada.
- Incorporation of prior learning assessments processes into the SIAST program.

Pilot delivery

The program was developed for on-site instructor lead to begin and with plans to develop distance education delivery options both in print/correspondence and on-line. Although not part of this project in terms of funding, SIAST was able to offer a pilot program using the newly developed materials. This pilot program was very successful. It was delivered as a full time day offering at Kelsey Campus from Nov 16, 2004 until Jan 31, 2005. Twenty students registered in the program and all twenty completed the program. Seven students received a *Program Award* from Sask Labour that covered the cost of their tuition.

2. Development of a Communications Strategy

Following the completion of the OHS Practitioner's Program the Advisory Group decided that the Building Capacity Sector Partnership should publicize the program and other accomplishments made to date. Subsequently a communications strategy was developed and a newsletter in print and electronic versions was produced. Eight hundred copies of the newsletter were distributed by the Advisory Group members and electronic versions were posted on several websites.

3. Development of a Web-Based OHS Directory

The needs assessment demonstrated that many OHS practitioners, OH Committees and employers wanted easy access to high quality OHS resources and information. The Advisory Group decided that a web-based OHS directory that served as a guide to OHS resources and education and training opportunities would be helpful. A compendium of the best available websites covering provincial, national and global organizations was developed. The directory was posted on *Worksafe* and Advisory group members have posted the *Worksafe* link on their sites.

4. Youth Environmental Scan

In February the Saskatchewan Program Research and Development Unit of the Saskatchewan Teachers Federation completed an environmental scan of youth exposure to occupational health and

safety. The report titled *Youth and OHS Education and Training Program* identified several opportunities for improving OHS youth programming.

Conclusion and Next Steps

What is next? While a tremendous amount was accomplished, there are still some needs to be addressed as this sector evolves:

- The SIAST OHS Practitioner's Program is not fully articulated with other academic and industry credentials.
- The SIAST Prior Learning Assessment and Recognition system requires further enhancing to be fully supportive of those challenging for credit.
- Young people in the K-12 system and those entering the workforce for the first time need further opportunities for OHS education and training.
- Management and owners have significant responsibilities for developing and implementing workplace safety systems.
- The Advisory Group is also concerned that OHS programming is concentrated in Regina and Saskatoon and is discussing ways to expand regional delivery of OHS programs.
- The Advisory Group has also noted that improvements in OHS opportunities for other more difficult to reach audiences such as Aboriginal youth and Aboriginal employers need to be developed.
- An OHS registry of practitioners has been discussed at the Advisory Group table.

As a result of the above discussions, the Building Capacity in OHS Sector Partnership will submit a concept proposal to Saskatchewan Learning for a second phase of initiatives that will address remaining gaps in OHS programming.

In conclusion, this project has been a very successful collaboration between all the partners from the private sector (union and management), government, educational organizations and OHS practitioner organizations and OHS safety associations. The foundation is now complete to continue with on-going development of this emerging sector as a profession with increased post-secondary credit training opportunities available in a variety of delivery methods.

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3.0 Introduction

In March 2001, Saskatchewan Labour and the University of Regina completed a report entitled "*Occupational Health & Safety Education and Training Programs in Saskatchewan - Bridging Options for Human Resource Development*". The report stated that "Saskatchewan would benefit from the implementation of a systemic, made in Saskatchewan OHS education and training model and that a consultation process should be undertaken to build consensus regarding the development of a model." Saskatchewan Labour subsequently organized a consultation process to discuss the report findings with over 30 stakeholders participating. The stakeholder consultation recommended that a provincial advisory group be established and a needs assessment be undertaken to identify specific education and training gaps and delivery methods, and to explore options to further develop and sustain OHS education and training. Saskatchewan Labour documented the results of the consultation process in "*Building OHS Capacity: Options for OHS Education and Training in Saskatchewan*" in March 2002.

From the work completed to that point, six central OHS issues were identified:

- Access to education and training opportunities
- Coordination and coherency of the OHS human resource development system
- Recognition of learning for transferability and portability of skills and knowledge for OHS career development
- Demand and supply of education and training programming to meet individual and system needs
- Quality and standards in OHS practice
- Resources available to meet future OHS system needs

In October 2002, Job Start/Future Skills Sector Partnerships Program funding provided the Saskatchewan Institute of Applied Sciences and Technology (SIAST), in collaboration with Saskatchewan Labour, with the means to establish a partnership of industry members and key stakeholders to work together to undertake a more comprehensive and specific needs analysis that would include:

- Completion of a needs analysis to identify gaps in provision of OHS accredited education and training
- Based on the findings of the analysis, modify, enhance or develop new accredited programs. This part of the Building Capacity in OHS Sector Partnership focused on implementing the Partnership's objectives and on the development of the contract deliverables including:
  - Identification of courses and learning objectives based on the findings of the needs analysis
  - Identification of program/course components to meet the needs and requirements of the education institutions
  - Designing of a system to maximize laddering or credit transfer among potential providers
  - Incorporation of prior learning assessment processes into programs

The Building Capacity in Occupational Health and Safety (OHS) Advisory Group was organized to advise on the development and delivery of education and training opportunities and human resource development in the OHS field, in order to reduce risk, injury and illness in Saskatchewan workplaces. Its second purpose was to facilitate collaboration of the development and delivery of OHS learning opportunities through networking and providing a forum on the components as agreed to in the contract with Saskatchewan Learning.

4.0 Needs Assessment

Literature Review

OHS Practice

Occupational Health and Safety (OHS) is a complex occupation. Today, OHS practitioners must acquire an increasingly wide range of skills and knowledge from accident control, risk management and ergonomics, to an understanding of health issues such as chemical exposure and illness prevention in the workplace. Using this knowledge, the OHS practitioner must design and manage complex OHS systems to protect and promote the health and safety of people at work, identify and control physical, chemical, biological and psychosocial hazards and identify and control work-related illnesses or trauma.

Contributing to the increasing complexity of the OHS occupation is the changing context in which these duties are performed. Significant changes have occurred in technology, employee demographics, industry sector mix and the availability, type and design of work. Each of these changes can potentially have a significant impact on the health and safety of the workers.

The types of technology workers utilize on a daily basis in their jobs have changed. In many cases, technology should have eliminated the need for workers to be exposed to dangerous machinery and equipment. However, many of the new technologies being utilized require repetitive motions. Repetitive Motion Injuries[1] (RMIs) are a class of injuries and illnesses that result from weeks, months or years of overuse of human joints. Connective tissues can become sore and sometimes unusable from repeated exposure to micro-trauma. Because of the slow onset of symptoms, people sometimes ignore the condition until the symptoms become chronic and permanent injury occurs. RMI conditions that are becoming common in workplaces include conditions such as Tendonitis and Carpal Tunnel Syndrome.

The aging workforce population has also impacted OHS. Most studies say that older workers tend to have fewer accidents, but when an older worker is injured, their injuries are often more severe and they take longer to heal. Plus, the types of injuries are usually different. Younger workers tend to get more eye or hand injuries, while older workers who have been working for many years report more back injuries. As well, since a RMI develops over time, older workers will tend to report more musculoskeletal injuries (MSIs).

The growth of casual, temporary and contingent work has impacted OHS and how OHS can be delivered in the workplace to all employees. Because of the rapid growth of the service/retail industry and the decline of the goods producing sector, employers are demanding increasingly diversified and flexible employees. The nature of work is changing toward more temporary, part-time and shift workers and it has been demonstrated that these workers, particularly if they are young, are at greater risk of suffering accidents at work (Sullivan, 2000). Also, these changes in forms of employment are increasingly shifting OHS practice away from safety-related concerns to workplace health issues and from the predominance of physical injuries to workplace psychosocial factors, such as workplace harassment and stress and how these factors impact on RMIs and MSIs.[2]

[1] http://www.ergonext.com/index.html
[2] http://www.britishsafetycouncil.co.uk/SafetyManagement/News/ECstrategy.htm

As a result of these changes, research has been conducted to identify appropriate systems to meet the new OHS challenges. Each of the following studies highlights what is required to meet these challenges.

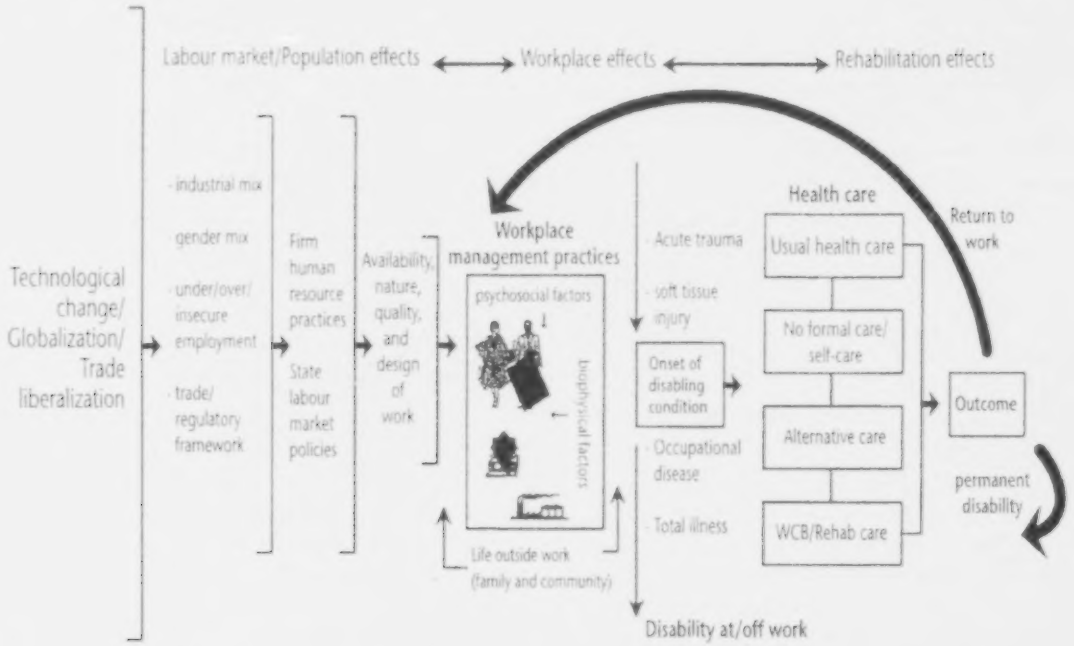
OHS and the New World of Work

Terrence Sullivan, President of the Institute for Work and Health, Toronto, and Leader of the Workplace Laboratory for HEALNet, a Network of Centres of Excellence in health research, is the editor of *Injury and the New World of Work*, an important contribution to the OHS field. The book contains 14 chapters written by a variety of OHS experts, many of which began as submissions to the British Columbia Royal Commission on Workers' Compensation in the spring of 1998. The book presents a comprehensive discussion of the trends that have taken place in the labour market, the workplace and in worker health and summarizes the rapidly growing body of evidence regarding the links between a range of disabilities and possible work-related causes.

Sullivan (2000) discusses four important OHS challenges facing workplaces. Figure 1 on the next page depicts these challenges and maps out today's pathways by which work affects health.

The first challenge is the emergence of a restructured labour market that includes pervasive use of technology, new management and human resource management practices and the growth of knowledge-intensive and service industries. Aleck Ostry, University of British Columbia, (Chapter 2) uses epidemiological data from the British Columbia Workers' Compensation Board for the period 1950-1996 to describe changes in industrial injury and illness rates and to link these to changes in the industrial composition of employment. Over this period, there was a shift in the composition of employment away from forestry to services, a large increase in the share of employment accounted for by women and a shift to more employment in small firms. A sharp drop in the work-related death rate had occurred in British Columbia by the 1990s and elsewhere, while strain-related injuries became the dominant concern.

Figure 1 - Conceptual map on how work affects health



Source: Sullivan,T. (2000), *Injury and the New World of Work*, p 7

The second OHS challenge concerns the prevention of injury and disability, driven by our increasing understanding of the interactions between these and the organization of work. In this section, Sullivan examines the connections between psychosocial risk factors and physical injury. Michael Kerr, Institute for Work and Health in the submission *The Importance of Psychosocial Risk Factors in Injury* notes that while reported injury rates for work-related musculoskeletal disorder (WMSD) have been decreasing, they still rank as the most common occupational injury, representing about half of all claims and accounting for well over half of all compensation costs paid out. Kerr identifies four categories of risk factors and provides a thorough review of the literature on the contribution of each of these to WMSD. Kerr concludes that though the link is still strongest with actual physical demands such as RMI, there is growing conclusive evidence of a link between psychosocial factors and WMSDs. These include monotonous work, poor workplace social environment, low job control, high-perceived workload and time pressures. Kerr argues that too often, the emphasis is on the individual - how to cope better with stress - rather than on workplace factors.

Other authors in the book support Kerr's conclusion. In fact, like Kerr, Robert Norman, University of Waterloo, and Richard Wells, Center for Occupational Health and Safety, University of Waterloo, in *Ergonomic Interventions for Reducing Musculoskeletal Disorders*, argue that psychosocial factors play a significant role in WMSDs and that, to be effective, interventions will need to be made at the level of an organization as a whole. Harry Shannon echoes this argument in *Firm-Level Organizational Practices and Work Injury*. Shannon, a senior researcher with the Institute for Work and Health, cites survey evidence from the manufacturing sector showing that lower claim rates are related to: delegation of authority, a high degree of worker autonomy and participation,

encouragement of career commitment and inclusion of health and safety goals in managers' job descriptions and appraisals.

Of particular interest is the article entitled *Joint Health and Safety Committees: Finding a Balance* by John O'Grady, a consulting economist specializing in labour market and industry analysis. O'Grady reviews the relatively small range of Canadian studies documenting the relationship between health and safety committee activities and a reduction of injury and disability. He concludes that committees can play an important role in improving workplace health and safety and identifies the key factors that allow such committees to be effective. Committee effectiveness is discussed further in section 3.4.

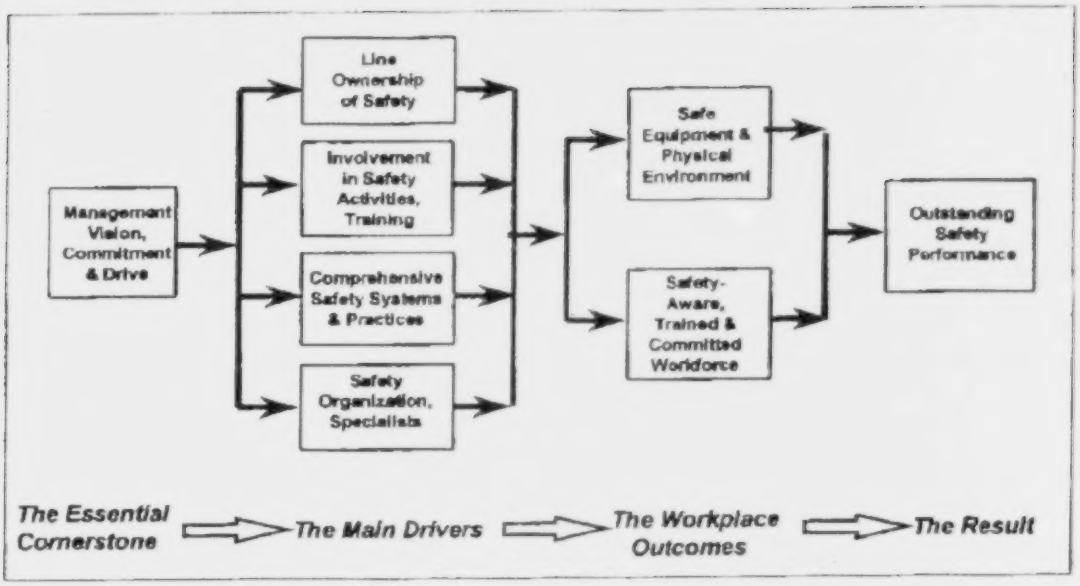
The third challenge concerns the timely treatment of injury and safe return to work. There is a growing literature examining the efficacy of various treatments and increasing recognition of the need to achieve a balance between clinical, workplace and insurance approaches to assist injured workers in returning to work.

Fourth, there is growing evidence that working conditions affect health in a variety of pervasive and non-disease-specific ways, across a wide range of physical and mental outcomes. The final contribution in the book by William Gnam, a research scientist and staff psychiatrist at the Centre for Addiction and Mental Health in Toronto entitled *Psychiatric Disability and Workers' Compensation*, addresses the controversial question of the relationship between mental disability and work. Psychiatric disorders in general are associated with high levels of disability and significant adverse labour market outcomes. Gnam states that there is robust evidence linking mental disability with long-term workplace factors, with high-strain jobs making a significant contribution to the development of anxiety and depression in some workers. Gnam argues further that the scientific evidence cannot justify the current policy restrictions on mental stress claims. The concern is that acceptance of the links to workplace factors will open the gates to a flood of claims and significant implications for compensation costs. More research is needed on the efficacy of workplace interventions in reducing mental disability. However, the link between the workplace and psychological effects is one that is not likely to disappear as the world of work continues to evolve toward jobs that make significant mental demands on workers.
Sullivan, Terry, (editor). (2000). Injury and the new world of work. Vancouver: UBC Press

OHS Models: Managing for World Class Safety

In the past decade, researchers have developed complex, integrated systemic OHS models based on studies of the practices of exemplary organizations. One such example is the model, *Managing for World Class Safety* developed by Dr. James Stewart. Dr. Stewart, a former executive of Dupont and a professor at the Rotman School of Management, University of Toronto, developed a comprehensive safety model based on a highly detailed survey questionnaire targeted at managers and employees. The fundamental purpose of the survey was to reveal the critical factors associated with a true level of corporate commitment to safety. Based on research at five of the world's safest companies and five with very poor safety records, Stewart was able to empirically correlate the values, beliefs, attitudes and practices that are necessary for creating world class safety organizations. His model stresses the necessary presence of management vision and commitment, line ownership of the safety agenda, worker involvement and an array of safety practices. Stewart's work provides tools to help managers quantitatively assess the level of safety management and the quality of the safety practices in organizations. The figure below illustrates the model in practice.

Figure 2 - OHS Model



Source: Stewart, J., (1999) *Managing for world class safety*. p. 9

The model begins with management commitment, which includes their direct involvement in the safety program, but even more importantly it requires their direct participation in significant health and safety training and education. Line managers implement the safety vision through ownership of the safety agenda and take responsibility for driving safety, monitoring for compliance to all OHS policies and procedures to prevent injury. Managers are accountable for safety results. The attitudes and behaviour of the employees in the company are aligned with the corporate vision, in part, through the demonstrated commitment of the line managers.

Stewart states that auditors can typically pick out the appropriate safety systems and technology the company should apply; however, the softer attitudinal aspects of commitment and involvement, while critical, are not as easy to observe. The model's questionnaire is key to measuring accurately and to what extent the attitudinal factors are present in an organization.

After surveying five "very safe" companies and five companies with very poor safety records, Stewart quantified the results and correlated them to the company's safety performance. For example, 75% of the 400 respondents in the very safe companies reported that management of their workplaces were held responsible for injuries, compared to only 12% in the companies with very poor safety records. The results of the research confirmed that all aspects of the model have to be present to ensure excellence in safety practice.

Since 1999 and the completion of the research project, firms have adopted Stewart's model, for example Nordsk Canada has implemented this system in six of its pulp and paper mills in British Columbia.

What does safety system research inform us about OHS practice? Two main points can be made: first, successful safety systems are complex, integrated and holistic in approach; second,

psychological attitudes and emotional responses are key factors impacting on safety performance. Thus, for an OHS practitioner to understand, implement and manage a world class safety system, higher levels of expertise are required than are normally gained from on-the-job training. A portion of such expertise will most likely be obtained from multi-disciplinary studies at a post-secondary educational institution.

OHCs and OHS Practice

John O'Grady, an Ontario labour market economist, examined the impact of occupational health committees on workplace health and safety in his article *Joint health and safety committees: Finding a balance* in Sullivan (2000). The potential and the limits of joint occupational health and safety committees are discussed through a review of twelve Canadian, United States and United Kingdomm studies documenting the relationship between health and safety committee activities and reduction of injury and disability.

Generally, all Canadian jurisdictions provide for a workplace responsibility system that provides for joint health and safety committees, the right to refuse work and the right to be informed of substances used in the workplace, which could be harmful (Ham's principles). O'Grady concludes that joint health and safety committees can play an important role in improving workplace health and safety and identifies the key factors that allow such committees to be effective.

An example of one of the studies reviewed by O'Grady was a Canadian study by Lewchuk, Robb and Walters (1996). Lewchuk, et al. selected 637 Ontario manufacturing and retail workplaces and identified when their Joint Occupational Health Committee was established. These workplaces were then cross-linked with Workers' Compensation Board (WCB) data on accepted time-loss injuries. Survey and WCB data were available for 208 workplaces. These comprised a mix of manufacturing sector workplaces and retail workplaces. The distinction is important because the retail sector was not initially subject to the legislative requirement to establish joint committees.

Lewchuk et al. posed two questions. First, were there differences between the change in injury performance between the manufacturing sector and the retail sector that became evident with the implementation of the Occupational Health and Safety Act? Second, within the manufacturing sector, were there differences in the change in injury performance related to whether the joint committee was established prior to or after the statutory requirement? Lewchuk et al. hypothesized that committees which were established prior to legislative requirement, were voluntary and may be presumed to reflect a higher degree of management commitment. Committees established in the period 1978-1980 were put in place in conformity with the legislated obligation, while those established after were set up following a period of non-compliance.

With respect to differences between the sectors, there was strong support that injury rates in the manufacturing sector fell more significantly than in the retail sector following the implementation of the Occupational Health and Safety Act. The estimating equation used in the study suggested that "the reduction in lost-time accident frequencies" implied by the adoption of the Act was in the order of 18% (Sullivan, p.175).

Also, the results of the study within the manufacturing sector indicated that where workplaces moved towards an internal responsibility system (workplace responsibility system), either before they were mandated or immediately upon the knowledge that they may be mandated, joint health and safety committees improved a workplace's health and safety record. However, where workplaces moved towards a workplace responsibility system only reluctantly, sometimes after

contravening the Act for a period of time, the formation of the committee had no clear effect (p.175).

Lewchuk et al. concluded that "the internal responsibility system" could lead to significantly lower injury and illness rates. However, "simply mandating committees is unlikely to have much effect at workplaces where the workplace responsibility system and the co-management of health and safety matters are not embraced by management and/or labour" (p. 175).

In addition to the Lewchuk et al study, O'Grady examined other studies and identified several key factors correlating with reduced injury rates including the following:

- The need for committee members to be *trained*. This was common in all the studies he reviewed
- *Management commitment* to the committee process is important
- Committee authority should rest in an intermediate position between having an *executive role* rather than just an advisory role. Committees need to be empowered to carry out certain functions
- *Safety policy* may be assigned to committees such as in Quebec where committees have decision-making power on personal protective equipment and can select an external medical advisor
- *Making available third party impartial expertise* to committees may also strengthen their performance and operations

O'Grady concludes that the evidence from empirical research is that joint health and safety committees can play an important role in improving workplace health and safety. However, the critical factor is the capacity of the committees. Capacity can be built in by ensuring committees have the right information and training. The right regulatory regime and the structuring of economic incentives also support committee success. As well, internal responsibility is not a substitute for standard setting, nor for enforcement, though effective committees can reduce the overall reliance on compliance orders (p. 192-193).

Therefore, given the research on committees, OHS practitioners must have a full understanding of the operation of committees and their critical success factors. In addition, OHS practitioners must attain the skills to mentor OHCs and facilitate their ongoing development.

Occupational Health Committees and Saskatchewan Labour

Saskatchewan Labour is responsible to set and enforce rules that help make Saskatchewan workplaces safe. As part of its role, the Department requires employers with 10 or more workers to create occupational health committees. Approximately 4000 Committees have been established. Working together, employers and workers help identify and control workplace hazards. Committees are a critical part of the self-monitoring system that keeps workplaces safe. They promote workplace safety in several ways including workplace inspections, education, promotion/awareness initiatives and minutes that record committee activities to resolve workplace hazards.

In 2001-2002, the Provincial Auditor examined Saskatchewan Labour's monitoring procedures by examining committee minutes from 100 high-risk workplaces.

- The Auditor concluded that committee minutes are an efficient way for the Division to enforce the legislation concerning the effective function of committees and that the Division adequately used the minutes to enforce the role of the committees.
- The Auditor recommended that the Occupational Health and Safety Division improve its processes to respond consistently to committees that request assistance.
- The Auditor concluded that occupational health committees perform an important role in creating safe workplaces.

The Auditor's examination of committees and the role of occupational health officers demonstrate that OHS practitioners are constantly required to make judgments about risk and effectively communicate such complex information to employers and committees.
Source: *Provincial Auditor Saskatchewan 2002 Spring Report* p.117-126

University OHS Education and Training Programs
The increasingly complex nature of OHS has created a need for advanced education and training. OHS practitioners must acquire an increasingly wide range of skills and knowledge. This has led to a number of programs being established in many industrialized countries at the University Bachelor and Masters levels.

McGill University
- McGill offers a Masters in Science degree in Occupational Health. This program is attached to the Faculty of Medicine.
- Students require a bachelor's degree or equivalent in science as a prerequisite.
- Students must complete ten courses to earn the M.Sc. (applied). To earn the M.Sc. students must complete a project.
- Courses to be completed are as follows:
  1. Occupational Hygiene
  2. Principles of Statistics in Medicine
  3. Monitoring Occupational Environment
  4. Principles of Toxicology
  5. Physical Health Hazards (double class 6 credits)
  6. Occupational Safety Practice
  7. Work Environment Epidemiology
  8. Occupational Health Practice
  9. Biological and Chemical Hazards

Ryerson Polytechnique
- Ryerson School of Occupational and Public Health offers a four-year degree program. There are two options: OHS and Public Health.
- Students with a bachelor's degree may apply for the two-year OHS specialty, which leads to a Bachelor of Applied Science. Chemistry and microbiology courses are prerequisites.
- To obtain the Bachelor of Applied Science, eight courses are required after degree:
  1. OHS Law
  2. Occupational Health
  3. Hazard Recognition and Control
  4. OHS Systems (includes the roles and functions of labour and management)
  5. Measurement and Analysis
  6. Topics in OHS (e.g's policy issues, legislation reform, new OHS techniques)

7. Short Management Reports (Written report presentation and oral reporting)
8. Electives: One of Organizational Behavior, Theory and Practice of Public Administration, Workers' Compensation Management

- To obtain the degree in the Public Health area students take courses in areas such as food hygiene, water supply, waste disposal, environmental toxicology, infection control and pollution control. This option has more of an environmental emphasis.

University College Dublin

- University College Dublin through its Centre for Safety and Health at Work, offers a certificate, diploma, degree and masters.
- Following the completion of the requirements for a Diploma, students can take six additional courses and receive a B.Sc. in OHS Management.
- The required courses after diploma are:
    1. Research Methods/Data Processing and Analysis
    2. Risk Management
    3. Applied Management for OHS
    4. OHS Environmental Management
    5. Safety Management and Quality Auditing
    6. One elective from Occupational Hygiene, Occupational Health, Ergonomics, or Toxicology
- A work-based project is required and students must have two years work experience in OHS before the degree.

Colorado South University

- Colorado South offers a Masters designed for mid-career professionals who are seeking to expand their management career options. All courses are online.
- A Bachelor's Degree is a prerequisite and the following courses are required:
    1. Advanced Training and Development
    2. Safety Engineering
    3. Advanced Ergonomics
    4. Research methods
    5. Safety and Accident Prevention
    6. Advanced Industrial Hygiene
    7. Fire Protection
    8. Toxicology
- Electives are ISO Standards, System Safety Engineering, Business Ethics, or Emergency Management.
- Both have Masters degrees that are attached to their Faculty of Engineering and both have very wide-ranging offerings and multiple specialties.

University of Michigan and University of Wisconsin Madison

- Both have Masters degrees that are attached to their Faculty of Engineering and both have very wide-ranging offerings and multiple specialties.

Woodland Grange

- This United Kingdom, through its extension programming, offers health and safety courses for senior executives. This program offers one and two day courses in the following:
    1. Civil liability

2. Safety and risk management models
3. Accident costing
4. Corporate manslaughter
5. Employers duty of care
6. Health and safety legislation
7. Safety management systems

Key Findings

- OHS degrees, either Bachelor or Masters, are attached to a variety of different university departments.
- OHS degrees most often fit either in Medicine (McGill), Engineering (Michigan, Wisconisin, Madison) or Environmental Sciences (various). Some universities also have Centres of Education and Work and in some cases OHS has attached itself to those Centres. In those cases, the OHS curricula focuses on the design of work, the changing workplace, psycho-social factors, etc. These programs are developed with more of a social sciences slant.
- Continuing education and executive seminars aimed at senior managers and middle managers are also offered by various universities in the United States and the United Kingdom. Managerial understanding of their legal obligations regarding the development and implementation of workplace health and safety systems is critical.
- To create a major/specialization in OHS at the degree level, there are several possible courses that would meet the needs of the OHS system. The most feasible courses, at the right academic level and that would also be multi-disciplinary are:
  - Business Ethics and Corporate Responsibility (possibly developed by Humanities and Faculty of Business)
  - OHS Law and Statutory Obligations (possibly developed by Faculties of Law and Business)
  - Management of Safety Systems (Faculty of Business or Administration)
  - Safety Management, Risk Assessment and Quality Auditing (Faculty of Business - Accounting)
  - Evaluation of Safety Systems and Loss Control (Faculty of Business and Engineering)
  - Work Environment (Faculties of Engineering, Kinesiology, Medicine, Adult Education)
  - Managing Disability (Health Administration, Faculty of Business)

Literature Review Key Findings

Examining the above studies enables one to draw a number of conclusions regarding the OHS system and the education and training of OHS practitioners. The following are the key findings from the literature review.

- OHS is a complex occupation. Today, OHS practitioners must acquire a wide range of skills and knowledge from accident control, risk management and ergonomics, to an understanding of health issues such as chemical exposure and psychosocial stressors. Contributing to the increasing complexity of the OHS occupation is the changing context in which these duties are performed. Significant changes have occurred in technology, employee demographics, industry sector mix and the availability, type and design of work. Each of these changes has had a significant impact on the health and safety of the workers.
- A number of challenges regarding the prerequisite skills and knowledge of OHS practitioners are rapidly evolving including:
  - The emergence of a restructured labour market that includes pervasive use of technology, new management and human resource management practices and the growth of knowledge-intensive and service industries

  - Though the link is still strongest that it is the actual physical demands of work such as repetitive motions that produce injury, there is growing conclusive evidence of a link between psychosocial factors and WMSDs
  - Occupational health committees play an important role in improving workplace health and safety as long as key factors that allow such committees to be effective exist. Simply mandating committees is unlikely to have much effect at workplaces where the workplace responsibility system and the co-management of health and safety matters are not embraced by management and labour. This creates an important, and in some cases, additional role for OHS practitioners to play
  - Work conditions affect health in a variety of pervasive and non-disease-specific ways, across a wide range of physical and mental outcomes
- Complex, integrated systemic OHS models, emphasizing employee's physical safety, rather than health and workplace illness, have evolved based on the positive experiences of successful safety organizations. However, many organizations are still not utilizing these more sophisticated models. OHS practitioners must develop the "know how" to implement such systems.
- Management commitment, line ownership and worker involvement are the fundamental drivers of safety. OHS education programs must be increasingly aimed at improving OHS management and supervisory skills.
- A number of educational institutions in Canada are offering diploma and degree level programming to students and OHS practitioners at much higher levels than are occurring in Saskatchewan.

5.0 Need Assessment Survey Methodology

Surveys of Target Audiences

Input on the six OHS issues and possible gaps in the OHS education and training system was sought from three target audiences. These audiences were comprised of groups that are impacted by OHS education and training options and included the following:

- OHS practitioners - all current students and graduates of the University OHS Certificate Program, those who attended OHS seminars and/or those practitioners with a Canadian Registered Safety Professional (CRSP) designation
- Employers - categorized by organization size, location and industry sector
- OHC co-chairs - categorized by employee/employer, organization size, location and industry sector

Survey Instrument Development

The survey instrument used for each targeted audience was carefully developed. Insightrix, online service bureau of Innovation Consulting Group, worked in conjunction with the Advisory Group, Saskatchewan Labour, Saskatchewan Learning and SIAST to develop the instruments. Each survey focused on the six central issues, identified in previous studies, concerning OHS education and training and features of the OHS human resource development system.

For each survey audience, efforts were made to keep questions similar in structure and content where possible. This assisted in response comparison from each target group and determined in what areas, consistency in responses existed.

Pre-testing of each survey instrument was conducted to determine if the respondent understood the questions, required any clarification and if the questions were easy to read. Changes were made to the survey instruments based on this pre-test feedback.

OHS Practitioner Survey – OHS Certificate Students

The survey of OHS Certificate Students was conducted entirely online. E-mail invitations to students asking them to participate were sent out by Advisory Group members: Vonda Croissant, Head Certificates Division at the University of Regina; and Grace Milashenko, Coordinator, Extension Division, University of Saskatchewan. Each e-mail included a cover letter asking for cooperation in completing the study. The respondents were also assured confidentiality in completing the survey. Using randomized numbers and a unique identifier, the respondents were unable to provide multiple submissions but could take advantage of the save and resume function, whereby they could leave and finish the survey later. The universities sent out one reminder to all students who had not completed the questionnaire.

Data was collected from January 18, 2003 to February 7, 2003. Approximately 150 invitations were sent to graduates, current students and those who attended OHS seminars. Of these, a total of 85 completed the survey. Another 22 surveys were started, but not completed; however, the responses that were entered are used in the analysis.

OHS Practitioner Survey – CRSP Designation

A list of contacts was provided by Saskatchewan Labour through the Canadian Society of Safety Engineering, Advisory Group member Steve Wallace and loaded into the contact database system for this survey. Innovation Consulting Group telephoned each individual with the CRSP credential

and conducted the survey by telephone and/or e-mail. If respondents were occupied and could not respond, then an e-mail was sent and they completed the survey online.

Each e-mail was personalized and included a cover letter asking for cooperation in completing the study. The respondents were also assured confidentiality in completing the survey. If respondents had not completed the e-mail survey within three days of the invitation being sent out, a reminder e-mail was sent. This was followed up one week later with another e-mail reminder. Phone reminders were also conducted.

Data was collected from January 13, 2003 to February 7, 2003. A total of 56 names were supplied. Of these, 35 were deemed to be available. A total of 22 persons with CRSPs were interviewed (39% of total list supplied). Another 7 surveys were started, but not completed; however, the responses that were entered are used in the analysis.

Employer Survey

A list of organizations was provided by Saskatchewan Labour and loaded into the contact database system for this survey. Each organization that was loaded had an active Occupational Health Committee (OHC). Innovation Consulting Group telephoned each employer and identified the individual in charge of managing and hiring OHS staff.

The survey was conducted in a multi-mode format. Surveying employers was best accomplished by setting an appointment to call at a time that was convenient to the employer or by providing options in which the employer could respond. The employer was offered the choice of completing the survey online or over the telephone. If the employer chose telephone, the answers were entered into the database. If the employer chose online, a personalized e-mail was sent, including a cover letter asking for cooperation in completing the study.

The employer was assured confidentiality in completing the survey. Using unique ID numbers, the respondent was unable to provide multiple submissions, but could take advantage of the save and resume function, whereby they could leave and finish the survey later. Reminder e-mails were also sent out to those who did not respond to the initial invitation. A few respondents completed the survey by fax as well.

The targets set at the start of surveying were as follows: minimum of 50 employers with 100 or more employees, 35 employers with between 20 and 99 employees and 15 employers with less than 20 employees. A mixture of industries was chosen to ensure representation from all industry sectors and organizations were selected to ensure a balance of geographic locations (Regina, Regina rural, Saskatoon and Saskatoon rural).

Data was collected from January 23, 2003 to February 7, 2003. A total of 110 employers completed the survey. Sixteen employers had less than 20 employees (15%), 41 employers had between 20 and 99 employees (37%), 54 had more than 100 employees (48%).

OHC Co-chair Survey

Saskatchewan Labour provided a list of contacts consisting of organizations that had active OHCs and was loaded into Innovation's database. Innovation telephoned each company and interviewed either the employee co-chair or employer co-chair. The target was to get approximately 50% of the responses from each.

This survey was also conducted using a multi-mode format. The respondent was offered the choice of completing the survey online or over the telephone. If the co-chair chose telephone, the answers were entered into the database. If the respondent chose online, a personalized e-mail was sent, including a cover letter asking for cooperation in completing the study. The respondents were assured confidentiality in completing the survey. Using unique ID numbers, the respondents were unable to provide multiple submissions, but could take advantage of the save and resume function, whereby they could leave and finish the survey later. Reminder
e-mails were also sent out to those who did not respond to the initial invitation.

The targets set at the start of surveying were as follows: minimum of 50 co-chairs contacted in organizations with 100 or more employees, 35 co-chairs in organizations with between 20 and 99 employees and 15 co-chairs in organizations with less than 20 employees. Each stratum was evenly divided between employer and employee co-chairs. A mixture of industries was chosen to ensure representation from all industry sectors and organizations were selected to ensure a balance of geographic locations.

Data was collected from March 4, 2003 to March 11, 2003. A total of 490 co-chairs were contacted and 104 co-chairs completed the survey. The breakdown of the 104 co-chairs by employer size and co-chair type is as follows: 7 employee co-chairs in the less than 20 employees category, 17 employee co-chairs in the 20 to 99 employees category, 23 employee
co-chairs in the 100 or more employees category, for a total of 47. Employee co-chairs were more difficult to contact and in some cases were unable to be absent from the job site when Innovation made contact with them.

The employer co-chair respondents were as follows: 9 employer co-chairs in the less than 20 employees category, 20 employer co-chairs in the 20 to 99 employees category and 28 employer co-chairs in the 100 or more employees category, for a total of 57.

Survey Analysis

As the respondent filled out the online survey, or an Innovation Consulting Group surveyor entered the information, all responses were automatically loaded into an online database for analysis. Some additional cross tabulations and analysis were conducted in order to gain a deeper understanding of the target groups' issues or concerns.

Response Rate Summary

The following table indicates the response rates for the each of surveys conducted. Surveys of employers and OHC co-chairs were stratified by the number of employees in the organization, the geographic location and by industry sector.

Table 1 - Response Rate Summary

Audience	1-19 employees	20-99 employees	100 or more employees	Total completes	Overall response rate
OHS Certificate Students	n/a	n/a	n/a	85 *	57% **
CRSP Designation	n/a	n/a	n/a	22 ***	39%
Employers	16	41	54	110	Target = 100
OHC co-chairs	16	37	51	104	Target = 100

** Conducted using Insightrix online survey technology. Excludes 22 respondents who answered some of the questions but did not completely finish the survey.*
*** Approximately 150 graduates and current students in the Certificate program*
**** A total of 56 names were supplied of which 35 were deemed to be available i.e. contact information was supplied or searched for. Excludes 7 respondents who started the survey but did not finish the entire survey.*

All of the survey response rates were excellent. A total of 321 individuals, intimately involved in OHS, provided extensive interviews on the study's six central issues.

Key Informant Interviews

Saskatchewan Labour (Institutional Analyst, Brian Banks on assignment from Saskatchewan Learning) conducted interviews with a number of organizations that have a large financial investment or mandate in OHS. The organizations were comprised of large private sector companies, industry and community-based safety associations, privately owned safety vendors and various public sector agencies. An interview script was prepared and followed for each interview. The interviews were approximately one and one half hours in length and focused on the six issues regarding OHS that were identified in earlier studies conducted by Saskatchewan Labour. A meeting with the Saskatchewan Federation of Labour's OHS committee was also held to discuss the purposes of the needs assessment and the pertinent study issues.

6.0 Survey Results

OHS Practitioner Survey

Respondent Profile

The OHS Certificate students and graduates at the University of Saskatchewan and the University of Regina were surveyed with a 57% response rate. Saskatchewan practitioners with a CRSP designation were also surveyed and approximately 39% completed the survey.

The practitioner respondents who answered the survey were very experienced in the OHS field with 46% having more than 5 years employment experience. 51% were between the ages of 41 and 50. They were employed in a wide variety of industry sectors with the primary industry other than agriculture, communications and government having the greatest representation. Of those employed, 77% were performing their duties on a full-time basis. A majority of the respondents' income levels were over $40,000/year with almost 50% earning more than $50,000/year.

Survey Goals and Objectives

The survey instrument developed to interview practitioners with a CRSP designation and the student and graduates of the OHS Certification Program, focused on the six OHS issues identified in the previous studies. Specifically, the survey was divided into the following sections:

- Decision to take OHS training and education
- Accessibility of OHS training
- OHS education and training system
- Quality of OHS education and training
- Recognition of prior learning
- Learning covered in courses
- Increasing OHS education and training investments
- Employer support
- General comments
- Demographics

See Appendix A for a question-by-question analysis.

Key Survey Findings

Access Issues

- The most frequently stated reason for pursuing either the OHS Certificate or the CRSP designation was to "advance their career".
- OHS practitioners strongly support the delivery of OHS courses in Saskatchewan that lead to a degree or diploma, and this view is even more pronounced among the OHS Certificate students and graduates. Of the OHS Certificate students/graduates that responded, 85.9% indicate that access to courses that lead to a degree or diploma is important over the next few years. Furthermore, 71.8% of the OHS Certificate student/graduates indicate that it would be important to them to attain an OHS degree or diploma, if it were available in Saskatchewan.
- There is interest among both the CRSP and OHS Certificate students and graduates to access online OHS education and training. Approximately 70% of the respondents (OHS Certificate students/graduates and CRSPs combined) indicated that they would like to access online education and training.

- Approximately 46% of the OHS Certificate students/graduates indicate they plan to obtain a CRSP designation.

Coordination and Coherency of the OHS System Issues

- There is a lack of awareness of the educational qualifications that advance OHS careers. In fact, one third of respondents indicate they disagree that students are aware of the qualifications required. Furthermore, approximately half of the respondents (55.5%) feel that employers do not understand the educational qualifications required to advance OHS careers.

Recognition of OHS Practitioners' Prior Learning Issues

- Prior learning assessment and recognition (PLAR) is strongly supported with over 70% of the OHS Certificate students/graduates and over 80% of the CRSPs indicating that PLAR is important.

Demand/Supply Issues

- Both the OHS Certificate students and graduates and CRSPs indicate they required further training in following areas to practice successfully as an OHS practitioner (see Table 3 of the Appendix):
  - Environmental management
  - Soft Skills – conflict resolution, problem solving, teamwork
  - Psychosocial factors and job stress
  - Ergonomics
  - Safety supervision
- Compulsory training in order to practice in the OHS field is highly supported by both the CRSPs and the OHS Certificate students/graduates.

Quality Issues

- There is a concern that Saskatchewan's OHS practitioner qualifications have fallen behind other provinces and countries. Of the respondents surveyed, 26% indicate that Saskatchewan's qualifications have fallen behind.
- The ability to handle health issues in the workplace is a concern with about 20% of respondents indicating they disagreed with the statement that their education and training prepared them to respond to health issues in the workplace.
- Approximately 80% of both OHS certificate student and graduate respondents and CRSPs indicate that it is either important or very important that standards be developed for content and delivery of OHS for the different OHS occupational categories.

Resource Issues

- There is agreement among both the CRSPs and the OHS Certificate students/graduates that the managers of OHS systems as an occupational group should be the top occupational priority for receiving increased education and training investments (see Table 4 of the Appendix).
- There is agreement among both the CRSPs and the OHS Certificate students/graduates that the development of an entry-level applied certificate should be the top program priority for receiving increased education and training investments (see Table 4 of the Appendix).
- Employers (80-90%) are investing in the education and training of their OHS personnel by paying all or part of their OHS education and training tuitions.

Employer Survey

Respondent Profile

A total of 110 employers completed the survey representing a wide variety of industry sectors. The manufacturing sector is the most highly represented with the remainder of the sectors very evenly represented. Respondents also represent a good cross section of employer size with 30% in the 50-149 employee range. Approximately 42% surveyed, indicate they employ OHS staff. Of those that employed OHS staff, the average number of staff employed is two positions.

Survey Goals and Objectives

The survey instrument developed to interview employers focused on the six OHS issues identified in previous studies. Specifically, the following areas were included:

- OHS staff
- Access to OHS staff
- Accessibility to and satisfaction with OHS Training
  - Access to OHS Trainers - Safety Association
  - Access to OHS Trainers - Saskatchewan Labour
  - Access to OHS Trainers - Private Vendors
  - Access to OHS Trainers - Educational Institutions
  - Online Distance Learning
- OHS Education and Training System
- Quality of OHS Education and Training
  - Skill Levels of Training Providers
- Recognition of Prior Learning
- Learning Covered in Courses
- Increasing OHS Education and Training Investments
- OHS Resources
- General Comments
- Demographics

See Appendix B for a question-by-question analysis.

Key Survey Findings

Access Issues

- Employers access training and education programming from all the various types of training providers.
- Management, supervisors and the staff person in charge of OHS in the workplaces are not the primary audiences for OHS training.
  - Of the respondents that utilize Saskatchewan Labour training, 70% indicated that the committee members and co-chairs receive the training.
  - Of all the providers, safety associations appear to provide the most training to other employee groups. About half of the respondents also indicate that supervisors and management receive training from safety associations.
  - Primarily, employees are the recipients of private vendor training.
- Employers (40%) are somewhat or very concerned that there are only two formal credentials available in Saskatchewan for OHS practitioners.

- Employers are interested in utilizing online OHS distance education as a training alternative for their OHS staff. This is indicated by 56.8% of the employers surveyed. They are less interested in utilizing online distance education for their committees.
- Only 7% of employers indicate they are **not** providing any OHS training.

Coordination and Coherency of the OHS System Issues

- The qualifications of OHS staff employed by respondents are wide ranging. However, 40.4% of OHS staff are trained on the job and do not have a formal credential.
- There is support among employers for the development of a basic entry-level applied certificate. Of the employers surveyed 50.7% indicated that it was important to develop the certificate.

Recognition of OHS Practitioners' Prior Learning Issues

- There is support for PLAR among employers of all sizes with 42.7% of employers indicating that the development of PLAR for OHS professionals was important or very important (another 26.4% were unsure).

Demand/Supply Issues

- Employers are very concerned about the impact of stress, abuse, harassment and violence on the health of their workers. 58.2% of employers indicate in the survey that they are very concerned.
- The primary areas of importance that employers indicate in terms of the type of learning required included ergonomics, environmental management, occupational hygiene and employability and soft skills.

Quality Issues

- The safety associations received the highest satisfaction rating from employers, followed by Saskatchewan Labour and then private vendors.
- Employers are not assessing the skill sets and qualifications of the training providers, nor are they assessing the relevancy and applicability of the training providers' OHS curriculum. Over half of the respondents surveyed indicate they were not doing so.
- Although, employers hire OHS staff with no formal qualification, they indicate in the survey that they are concerned with potential liability issues that could relate to OHS staff qualifications.
- Experience in OHS practice is important to employers. Of the employers surveyed, 29% of employers indicate they would seek out OHS employees with no formal post-secondary educational qualification, but encourage them to take an OHS credential.
- More than 50% of employers do not assess the quality and standards of OHS training they access.
- 20.9% of employers indicate their committees do not receive sufficient training to operate effectively.
- Employers (62.7%) agree that the OHS system needs to be strengthened, so that it can play a more effective role in solutions to workplace health issues.

Resource Issues

- Similar to the results of the OHS practitioners, the top occupational priority for increasing OHS education and training investment is managers of OHS systems.
- Similar to the results of the OHS practitioners, the top program priority for increasing OHS education and training investment is the development of an OHS entry-level applied certificate.

- Many employers (40%) hire OHS staff that do not hold any formal qualifications, but were trained on the job.
- A significant number of employers are looking at hiring additional OHS staff in the next 3 years. This was indicated by 15.5% of the employers surveyed.
- Many employers (58%) invest in new OHS skill development.
- Only 2.7% of employers indicate their OHS budget will decrease in the next five years.

OHC Co-chair Survey

Respondent Profile

A total of 104 employer and employee co-chairs of Saskatchewan companies completed the survey. Co-chairs, categorized according to employer size, are quite evenly represented by small, medium and large organizations. For example, 26.7% of respondents work for organizations with 50 to 149 employees. The respondents also worked in a wide cross section of industries with manufacturing the largest category. Respondents work in organizations with an average of 1.8 full-time OHS paid staff and 0.4 part-time OHS paid staff. Respondents have considerable co-chair experience with 48.2% of respondents serving as co-chairs for more than 4 years. 73.6% indicate they have been trained in performing the duties and functions of a committee and 76.4% indicate that their committee has been in existence for more than 6 years. Of the total responding, 45.3% of co-chairs are employee co-chairs and 54.7% are employer co-chairs.

Survey Goals and Objectives

The survey instrument developed to interview OHC co-chairs, focused on the six OHS issues identified in the previous studies. Specifically, the following areas were included:

- Number of OHS Staff
- Accessibility to and satisfaction with OHS Training
  - Access to OHS Trainers - Safety Association
  - Access to OHS Trainers - Saskatchewan Labour
  - Access to OHS Trainers - Private Vendors
  - Access to OHS Trainers - Educational Institutions
  - Access to OHS Trainers - Unions
  - Online Distance Learning
- OHS Education and Training System
- Quality of OHS Education and Training
- Skill Levels of Training Providers
- Recognition of Prior Learning
- Learning Covered in Courses
- OHS Resources
- General Comments
- Demographics

See Appendix C for a question-by-question analysis.

Key Survey Findings

Access Issues

- Similar to the findings in the employer survey, the OHC members are the primary users of the training.

- Primary users of the safety association training and Saskatchewan Labour courses are the OHC committee members and co-chairs. WHMIS is the most common type of training accessed from safety associations and Level 1 and Level 2 are the most common type of training accessed through Saskatchewan Labour.
- Primary users of private vendor training are committee co-chairs and general employees. This finding is similar to the employer survey. Over 50% of respondents indicated they took WHMIS training from private vendors. Other common responses included CPR/First Aid training.
- Primary users of the union training are employees and committee members. The most common types of training accessed from the union are WHMIS and Workplace Inspections.
- The co-chairs display a relatively high interest in furthering their training in OHS with 25.5% of respondents indicating that they are very interested in obtaining the University OHS Certificate and 23.6% in respondents obtaining the CRSP.
- Co-chairs are interested in online delivery of OHS training with 62.3% of respondents indicating that their committee would "often" or "sometimes" utilize OHS online distance education if it were available as a training alternative.

Coordination and Coherency of the OHS System Issues

- Co-chairs indicate that 32.4% of OHS staff in their organizations have no formal OHS qualifications.
- Similar to the employer and student surveys, 60.8% of the co-chairs express interest in developing a basic entry-level certificate as a first step on the career ladder for OHS practitioners.
- Co-chairs indicate that their organizations utilize OHS training and upskilling from all types of training providers: safety associations, Saskatchewan Labour, private vendors, and unions for all types of employees: committee co-chairs, committee members, employees, supervisors and managers.

Recognition of OHS Practitioners' Prior Learning Issues

- Similar to the employer and student surveys, 62.2% of respondents say it is important to develop a PLAR system.

Demand/Supply Issues

- Similar to the employer survey, the co-chairs are concerned with the impact of stress, violence and harassment on the health of workers. 59.4% of respondents indicate that they are very concerned and another 25.5% are somewhat concerned. Furthermore, 69.9% of respondents indicate that they think it is important to strengthen the OHS system to play a more effective role in the solution of health issues.
- The OHC co-chairs indicate they require additional training to be effective. 50.9% of respondents agree that "training OHS committees to carry out its functions effectively" in their workplace needs improvement.

Quality Issues

- Similar to the employer findings, the co-chairs respond that a majority of their OHS staff in the organization do not have formal credentials.
- The majority of co-chairs (71.3%) say that the training they are receiving is adequate.
- Overall, the respondents are satisfied with the training provided by unions, safety associations, Saskatchewan Labour and private vendors.

- Approximately 1 out of 3 co-chair respondents indicate they have received little to no training in the last two years.

Resource Issues

- The co-chairs say that OHS budgets will increase over the next five years. This is indicated by 44.6% of respondents.
- Co-chairs indicate a high degree of willingness to collaborate with the following partners in the OHS system to strengthen the system:
  - Workers' Compensation Board
  - Safety associations
  - Saskatchewan Labour
  - Other employers
  - Unions

Key Informant Interviews

Interviews were held with a number of organizations that have a large financial investment or mandate in OHS. The organizations were comprised of large private sector companies, safety associations, privately owned safety vendors and various public sector agencies. The interviews focused on the six issues regarding OHS that were identified in earlier studies conducted by Saskatchewan Labour: access, coordination and coherency of the OHS human resource system, recognition of OHS practitioners' prior learning, demand and supply of education and training programs, quality of programming and resourcing issues.

Most interviews were about one and one half hours in length and were conducted with individuals who were responsible for managing the delivery of OHS programs in the workplace(s).

Organizations Interviewed

- Armour Consulting
- Brandt Industries, Agriculture Manufacturing Division
- City of Regina
- Consumers' Co-operative Refineries Ltd.
- Pozniak Safety Associates
- RCMP Training Academy
- Regina Health District
- Saskatchewan Association of Health Organizations
- Saskatchewan Construction Safety Association
- Saskatchewan Federation of Labour OHS Committee. Meeting was held with the nine unions represented on this committee
- Saskatchewan Gaming Corporation
- Saskatchewan Professional Drivers' Safety Council
- Saskatchewan Safety Council
- Service and Hospitality Safety Association
- University of Regina

Number of OHS practitioners employed by Key Informant Organizations

The organizations interviewed, not including the unions, employ approximately 50 OHS practitioners who have very wide ranging OHS backgrounds. Many practitioners do not have any

post-secondary OHS educational credentials, but have considerable workplace experience and some hold safety association certificates. Others have specialized education and training in areas such as OHS nursing, wellness, the university OHS certificate and a few have out of province diplomas, degrees or post degree certificates.

Meeting with Saskatchewan Federation of Labour OHS committee
Representatives of the SFL OHS Committee present were: Canadian Union of Public Employees (CUPE), Public Service Alliance of Canada (PSAC [2]), United Mine Workers (UMW [2]), American Federation of Musicians (AFM), Retail Wholesale Department Store Union (RWDSU), Communication Energy and Paperworkers (CEP), Canadian Union of Postal Workers (CUPW) and Don Anderson, Executive Assistant, SFL. Don Anderson is also the invited SFL representative on the Building Capacity in OHS Project Advisory Group.

One of the purposes of the meeting was to elicit the committee's viewpoints regarding how well committees were functioning, given the education and training of OHS practitioners and OHC co-chair education and training.

The official SFL position on matters affecting union members are determined by resolution at the annual SFL Convention. However, SFL OHS Committee members raised several questions about the intentions and potential outcomes of the Building Capacity Project and a wide-ranging discussion followed.

- How will this project benefit workers on the shop floor?
- Why is so much of the formal education and training geared to supervisors and managers at the university level?
- If qualifications and standards are changed and applied to practitioners, will this restrict opportunities for union trainers?
- Will university educated OHS practitioners interpret OHS standards and regulations too much from a management perspective?
- Why aren't managers in the workplace better trained in OHS?
- If the health care industry has such a high rate of injury and Saskatchewan Association of Health Organizations (SAHO) is primarily responsible for OHS training in this sector, then should SAHO get continuous funding to carry out OHS education and training?
- Why doesn't Saskatchewan set up a Workers' Education Centre like Manitoba, where workers can get OHS training?
- Why isn't there better enforcement of OHS regulations?
- Why don't the committees have greater powers?

Key Informant Interview Findings
The findings below are qualitative rather than quantitative and represent both individual and more general viewpoints.

Access Issues

- Key informants voiced concerns about accessing OHS programs that meet their needs. The main issues expressed were:
  - Locating customized training for special employee needs such as programming suited to workers with English as a second language, youth workers and employees in specialized industries
  - Locating programs with high quality curriculum and expert trainers

- Some key informants say that small and medium sized businesses are not sufficiently aware of Saskatchewan Labour's training programs
- Locating specialized and advanced courses is also identified as a problem for some key informants. Subjects, particularly at a more advanced level, such as asbestos, disability management, radiation, auditing, repetitive motion, back injury prevention and planning/managing comprehensive OHS programs are difficult to locate
- A number of the key informants are well connected to an informal network of OHS practitioners or a safety association and these organizations say they are less challenged with respect to accessing programs
- About half the organizations contract out of province expertise or send their employees to out of province programming
- A majority of the key informants is positive about accessing OHS programs and resources available online. Some are already developing online training. Most are using the Internet to download OHS information and using CD ROMs to deliver standardized programming. One organization is currently developing a website. Another is developing a safety supervision program that will be available online
- Some organizations are currently hiring new, additional OHS staff or filling vacancies and are having difficulties locating OHS practitioners with the specialized expertise required

Coordination and Coherency of the OHS System Issues

- A coherent career OHS pathway is an obstacle to the progress of OHS practice. Key informants identified a number of concerns including:
  - For entry to OHS there is a lack of clarity as to what is the most preferable training/education/work route for becoming a qualified practitioner
  - Employers have not established a consistent set of OHS occupational titles, nor the required knowledge and skill components at different levels of the occupation so that practitioners can progress easily in their careers from novice to expert
  - Many job titles do not have a high recognition factor, nor are they associated specifically with particular levels of expertise
  - Many OHS practitioners appear to have a rather narrow field(s) of expertise
  - OHS is characterized with a large number of credentials awarded by industry associations, safety associations and academic institutions. Different participants in OHS are not always cognizant of the meaning of the different types of credentials and the work they can perform
  - Some key informants seem to be satisfied with an on-the-job training model for developing OHS practitioners, while others more strongly support higher level, more formally educated OHS persons. However, no OHS body exists that has the authority to rationalize the training, education, qualifications and credential system in OHS. Some informants use train the trainer models quite extensively, while some commented that employers were not always aware of the time and resources that must be invested to develop an effective in-house OHS trainer
- Key informants also stated that there are a number of OHS trends that appear beneficial for the future of OHS practice, including:
  - There is a definite continuum of skills and knowledge in the OHS human resource system and overall, the system is gradually moving toward attainment of higher qualifications and credentials for all practitioners
  - There is a growing recognition among employers and practitioners of the university OHS certificate as a requirement for practice

- Employers are encouraging their OHS employees to obtain a post-secondary credential. Key informants are not overly concerned about a future expansion of compulsory credentials, but some small businesses, according to safety association key informants, are concerned about future cost increases when hiring OHS expertise
- Almost all of the key informants support the creation of a basic OHS entry-level certificate that is inclusive of OHS practitioners' experiential learning provided that standards and assessment of this learning is high quality
- Most key informants say the OHS human resource development system needs to work together in a more coordinated manner so that employers, safety associations and academic institutions do not continue to develop multiple, overlapping credentials, programs and courses
- Most key informants say that there is insufficient education and training for OHS practice regarding the management of strategic and comprehensive OHS systems. This is identified as a major gap in the OHS system

Recognition of OHS Practitioners' Prior Learning Issues

- Key informants are well informed regarding PLAR and its uses.
- The application of PLAR in OHS is unanimously supported on the condition that the PLAR system will fairly, consistently and accurately assess critical competencies possessed by OHS practitioners.
- Some informants warn that new credentials, especially if created at the entry-level, should not over value theoretical knowledge and under value practical OHS skills.
- Some of the key informants say PLAR is a good way to enhance interest and get a younger generation started in the OHS occupation.

Demand/Supply Issues

- Key informants have a great deal to say about how the OHS system balances the different approaches to health and safety, education/prevention, enforcement/compliance and engineering/environmental solutions.
- The very large organizations are concerned about being caught up in reactive modes, where much time and resources are dedicated to investigating incidents and assisting individuals with claims and return to work. These activities take OHS staff away from prevention and education.
- Some key informants suggest that safety associations' mandates should be to stress education and prevention and the creation of positive workplace cultures. At the same time, some say that Saskatchewan Labour should focus on prevention, enforcement and compliance. One key informant, however, suggested that more Saskatchewan Labour programs, especially safety supervision should be made available more often. Another key informant said that for some small businesses there are not enough economic incentives for them to invest in OHS, and those organizations (again mostly smaller businesses) that operate outside of the safety associations have no regular OHS system support.
- It is generally accepted that OHS practitioners should continue to educate youth entering the workforce in the basics of OHS. Young women in some industries also need special support. Some key informants are also uncertain about how training can positively influence attitudes of employees in high turnover industries and industries with many shift workers and contingent workers.
- A significant representation of key informants says there is an overabundance of low complexity industrial safety training courses in the system and some courses are outdated.

- Most of the key informants say that stress, harassment, violence and psychosocial factors need much greater attention in the form of employee education and prevention. A number of the organizations interviewed have set up comprehensive wellness programs. Nevertheless, one key informant reports that medical and time loss claims cost the organization $1.3 million in one year. Several, identified increasing numbers of back injuries as a serious concern. The connections and relationships among stress, workload and supervision/management skills are not well understood by employers, according to some key informants.
- When asked the question as to which participants in OHS require increased education and training investments, key informants choose frontline workers, practitioners at the entry-level, and OHC co-chairs and committee members most often.
- When asked what types of education and training skills sets need to be more available, management programs, supervision programs, due diligence and committee training are identified most often.

Quality Issues

- Discussions with key informants regarding how organizations assess the qualifications, skills and knowledge of OHS practitioners and the quality and effectiveness of training, reveal a wide spectrum of practices. Some large organizations and safety associations have well-established systems where criteria have been established and quite formal assessments of OHS programs occur. Industry-established health and safety standards are closely adhered to by some organizations. Others preview training programs and ensure that participants have opportunities to provide feedback. In some cases, informants say quality and standards are the responsibility of safety associations and Saskatchewan Labour to establish.
- One safety association described an evaluation of a training program delivered at a very large workplace and was able to demonstrate a decline in time loss injuries.
- Some OHS practitioners currently employed have only experientially-based knowledge and skills and are not required to meet rigorous academic or industry standards.
- One key informant says that quality and standards of trainers and training programs in OHS have been a pet peeve for years because of the wide range of quality in OHS.
- There is a very high degree of consensus that all trainers know, understand and teach the current legal OHS requirements that must be met in the workplace.
- OHS practice needs higher and more consistent standards, but who should be empowered to administer quality and standards? Industrial sites can be dangerous places and the quality of OHS programs should reflect positive ways as to how OHS personnel perform their duties. If there are no standards, how can organizations be held accountable for injuring people? Standards are protection.
- Organizations also have concerns about liability. In a prosecution situation, it is very important that a court of law recognize OHS practitioners as expert witnesses. Key informants are not certain if all OHS practitioners, with variously held credentials, would be recognized as experts.
- Most of the key informants agree that the quality and standards of OHS practice needs attention. Most say Saskatchewan could be doing more to strengthen OHS delivery. The majority view is that there needs to be a base-line standard to enter into the field and additional standards for advancing to higher levels of responsibility and control.

Resource Issues

Targeting OHS investments is recognized as an important strategy for the OHS system to reduce time loss injuries. Almost all of the key informants say that more collaboration is possible and would result in cost savings. The most frequently suggested tactics are:

- Strengthening OHCs through various measures so that they can operate more in the spirit of the legislation, not just act as monitors
- Re-clarifying the roles of the main players in the OHS system: Saskatchewan Labour, Workers' Compensation Board, safety associations and others such as unions. Establish clearly what organizations are best situated to deliver what services
- Establishing an online clearinghouse for OHS information, resources, courseware and/or expanding Saskatchewan Labour's website
- Delivering more education and training outside of Regina and Saskatoon
- Pooling and sharing resources, particularly courseware
- Publicizing certain generic workshops such as stress, back injury prevention, etc. across the OHS system to reduce the number of course cancellations

7.0 Analysis of Survey Results

Access

OHS practitioners, both CRSPs and OHS Certificate students/graduates, are highly interested in attaining academically credentialed education and training. Survey results and open-ended comments emphasize their interest in accessing higher levels of OHS education and training such as a diploma or degree.

Committee co-chairs also display a high level of interest in furthering their training in OHS with 38.7% of respondents indicating that they are very interested in obtaining the University OHS Certificate. Of the total co-chairs surveyed, about 50% indicate orientating employees to OHS and training committees to carry out their functions effectively, need improvement. One third of the OHC co-chairs received little or no training in the last two years.

Employers are recognizing the need for academically credentialed OHS practitioners. Of the employers surveyed, 78% of the organizations indicate they are very concerned or somewhat concerned with potential liability issues that could relate to OHS staff qualifications. As well, employers are supporting their OHS practitioners in furthering their educational qualifications. Of the students/graduates in the OHS Certificate program, 75% were having their entire tuition costs paid for by their employer.

Employers want to have more customized training available for their industry and to access specialized and advanced expertise in a number of OHS fields.

Online Delivery

The online delivery of OHS education and training was of interest to a high proportion of those surveyed and interviewed. Some of the key informant organizations that provide OHS education and training indicate they are already developing websites and online training. They also indicate that they are using the Internet to download OHS information and using CD ROMs to deliver standardized programming.

Approximately 70% of the OHS Certificate students/graduates and CRSP respondents indicate that they would like to access online education and training.

The OHC co-chairs would participate in online education and training if it were available. Only 9.4% of those surveyed indicate that the committee would never use online education and training. Approximately 33% indicate they would use it often (6 times or more a year).

Employers also support online learning. Of the employers surveyed, 37.3% agree they would use OHS online distance education sometimes or often, if it were available as a training alternative for their committees.

Online OHS programming is available from academic institutions outside Saskatchewan.

Coordination and Coherency of the OHS System

In Saskatchewan, the lack of an OHS career pathway is an obstacle to the development of OHS practice. An OHS career pathway, especially for those who have made long time commitments to OHS practice, is not well defined. The literature review reveals that the OHS education and training and human resource system are characterized by a number of credentials awarded by

industry associations, safety associations and academic institutions. However, different participants in the system, including student and employers, are not always cognizant of the meaning of the different types of credentials and the work OHS practitioners can perform. Low employer understanding of the educational qualifications is also evident by the absence of consistent OHS occupational titles and job descriptions. With such a wide range of job titles and job functions, particular OHS positions do not have a high recognition factor, nor are they associated specifically with particular levels of expertise. Some employers do not appear to be aware of the required knowledge and skill components at different levels of the occupation, disallowing practitioners to progress easily in their careers from novice to expert.

Both OHS Certificate student/graduate and CRSP survey respondents indicate that they themselves do not understand the educational qualifications that advance OHS careers, nor do employers. Despite this finding, a definite continuum of skills and knowledge in OHS practice has evolved, in fact, the system is gradually moving toward attainment of higher qualifications and credentials for all practitioners.

The key informant interviews and employer survey results indicate there is a growing recognition among employers and practitioners of the university OHS certificate as a requirement for practice. Also, employers are encouraging their OHS personnel to obtain a post-secondary credential by providing monetary funds for tuition and books.

A majority of the key informants say the OHS human resource development system needs to work together in a more coordinated manner so that employers, safety associations and academic institutions do not develop multiple, overlapping credentials and programs.

Recognition of OHS Practitioners' Prior Learning

The introduction of a prior learning assessment and recognition (PLAR) system into OHS practice received a high level of support from those interviewed and surveyed. The key informants unanimously support PLAR on the condition that the PLAR system will fairly, consistently and accurately assess critical competencies possessed by OHS practitioners.

Similarly, 74.7% of the OHS Certificate students/graduates and CRSPs also support PLAR, as they believe the application of PLAR is an important tool, which will assist them to advance their careers.

Basic Entry-Level Applied Certificate

A basic entry-level applied OHS certificate that serves as the first step on the OHS career ladder is strongly supported. There is a high level of support for an entry-level certificate among the key informants, employers, OHC co-chairs and OHS practitioners.

Almost all of the key informants support the creation of an entry-level certificate that is inclusive of OHS practitioners' experiential learning, provided that standards and assessment of this learning is high quality. The key informants view the basic OHS entry-level certificate to be a method by which an OHS practitioner with no or few academic qualifications, could be provided recognition for experiential learning. An entry-level certificate and a PLAR system would go hand in hand to assist many individuals to advance their OHS career.

Similar to the key informants, employers support the development of an entry-level certificate. Of the employers who had an opinion on the concept, 51% think it is important to develop the certificate. Also, employers rank the development of the entry-level certificate as a top priority.

Students/graduates also say that an entry-level certificate should be developed. When asked to rank six types of OHS programming in terms of priority for receiving increased education and training investment, the entry-level certificate was ranked the first priority by OHS Certificate students/graduates and second by CRSPs.

The OHC co-chairs also support the development of an entry-level certificate with 60.2% of the co-chairs indicating it is an important or very important step.

Diploma/Degree Program

The development of a university level OHS diploma/degree program will provide a middle step on the career ladder for OHS practitioners. All of the stakeholders in the study agree that higher-level programming aimed at supervisors and managers of an OHS systems is a top priority. Some key informants and OHS practitioners support a made in Saskatchewan OHS program rather than the continuation of the University of Alberta certificate program in the province.

Demand/Supply

OHS program content areas of the OHS university certificate program that need renewed curriculum development are:

- Employability skills such as teamwork, conflict resolutions and problem solving (soft skills)
- Management of safety systems
- Ergonomics
- Safety supervision
- Environmental management
- Psychosocial factors and job stress
- Risk management

These changes are supported by the OHS graduates. Each of the above content areas display a significant discrepancy compared to the level of the skill required to be a successful practitioner.

Stress, harassment, violence and the impact of psychosocial factors in workplace strain, trauma and injury need much greater attention. A number of the key informants interviewed indicate their organization has set up comprehensive wellness programs. Nevertheless, one key informant reports that medical and time loss claims cost the organization $1.3 million in one year. Several identified the increasing number of back injuries as a serious concern. The connections and relationships among stress, workload and supervision/management skills are not well understood by employers, according to some key informants. Also, of the OHS practitioners surveyed, 20% do not feel their education and training has prepared them for dealing with these issues and another 16.5% are neutral. OHS programs of all types must develop content and learning strategies to address these issues. Post-secondary education academic curricula should also create a specialized course related to these issues.

Employers and practitioners both identify that education and training opportunities for managers of OHS systems are in short supply. The key informants also indicate that there is insufficient

education and training for OHS practice regarding the management of strategic and comprehensive OHS systems. University programming should be developed to address this major gap in the system.

Quality

Development of consistent standards for the content and delivery of OHS education and training is deemed important by almost all stakeholders in the OHS system. Of the students/graduates surveyed, approximately 90% believe that consistent standards for delivery and content need to be developed. Many employers, however, are not applying consistent quality control measures and standards to the delivery of OHS in the workplace. Further, employers, including safety associations, hire OHS practitioners who do not possess any academic qualifications.

Employer and co-chair satisfaction ratings of the different training providers, average about 70% favorable, indicating room for improvement and growth among all providers.

Key informants also raise concerns about liability risk. With many organizations employing OHS practitioners with various OHS credentials, it is very important that courts recognize OHS practitioners as expert witnesses. Some key informants, however, are not certain if all OHS practitioners, with variously held credentials, would be recognized as experts.

Resources

All of the stakeholders in the OHS system demonstrate a great deal of willingness to develop partnerships and collaboration to strengthen the OHS system. A high degree of consensus regarding such strategies is apparent and areas for future action include:

- Develop a model career pathway for OHS practitioners that is inclusive of all practitioners in the system and that connects the experiential, work-based system to the academic system
- Establish a role clarification process with the goal of creating a more collaborative, integrated OHS system
- Set up an information clearinghouse containing OHS information, courseware and resources

8.0 Recommendations and Strategies for Advisory Group Consideration

Four strategies are suggested and each is discussed below.

An immediate task of the Advisory Group is to deliberate on these strategies and provide advice and guidance with respect to the next stage of the Building Capacity in OHS project to ensure that the obligations under the Sector Partnership Agreement are met.

- Create a model career ladder
- Invest in curricula development
- Develop an OHS practitioner association
- Implement collaborative initiatives

A Model OHS Career Pathway for OHS Practitioners

The needs assessment fully demonstrates that Saskatchewan workplaces would benefit from the implementation of a systemic, made-in-Saskatchewan OHS education and training model. The development of an optimal model should be based on fundamental program development elements and principles including:

- Comprehensiveness – the system development includes the major OHS stakeholders and education and training providers
- Coherency and coordination – the system provides for transparency and laddered practitioner credentials
- Portability – the system provides for the recognition of prior learning and the transfer of OHS skills and knowledge from industry-based programming to academic-based programming and from one academic institution to another
- Seamlessness – the system allows reasonable ease and flexibility of access of learners and OHS practitioners to relevant programming
- Integration – the system ensures that education and training at all levels and by all providers has connecting points to the next level
- Excellence – the system builds a strong OHS community of practitioners with employer-recognized position titles that reflect practitioners' competency from novice to expert
- Participatory – the system ensures OHS education and training is delivered for all levels by providers who meet quality standards

Career Pathways

Introductory Level – Industry-based credentials

Over many years, hundreds of OHS practitioners through work-based education and training have obtained various credentials to practice OHS. These certificates have been developed and are awarded by several types of industry-based providers. The OHS human resource development system should provide opportunities so that these certificates and individuals holding them can be recognized by the post-secondary education system. Portability and transferability of this learning will greatly assist individuals to advance their careers.

Intermediate Level - Post-Secondary Applied Certificate

Applied certificates usually include a higher percentage of credit hours related to practical skills gained through experiential learning than theoretical knowledge. Applied certificates usually allow applicants to challenge for credit using prior learning and assessment procedures.

The first post-secondary step on the OHS career ladder should be an applied certificate which could be developed and offered by SIAST. This certificate would establish a certain number of credit hours (SIAST's minimum is 180 hours), which combines a wide variety of practical OHS skills and theoretical content organized into basic learning units, for example:

- Maintaining and enhancing health and safety systems
- Contributing to improved control of health and safety risks
- Maintaining health and safety policy
- Facilitating learning in groups through presentations and demonstrations

This applied certificate would provide for recognition of the various industry association certificates as well as provide credit hours to learners who are experienced trainers in OHS specific courses such as Transportation of Dangerous Goods, H_2S Alive, Fork Lift Operation, Accident Investigation, WHMIS, Transporting and Lifting, CPR, as well as many other standardized courses sanctioned by safety associations, OHS associations and industry.

Creation of an applied certificate is strongly supported in the findings of the Building Capacity in OHS project. OHS practitioners and employers who have a large stake in strengthening OHS systems strongly favoured the creation of an applied certificate.

Diploma Level

A model career pathway also suggests that the university OHS certificate program be restructured from a University of Alberta certificate to possibly a Saskatchewan diploma program attached to a department at one of the universities other than extension or continuing education.

Currently, the University OHS certificate is the formal qualification end point for OHS practitioners, as other university departments delivering OHS diplomas and degrees do not readily recognize extension certificates. As long as Saskatchewan only provides an extension-based OHS certificate, OHS practitioners will have great difficulty advancing their careers. Findings of the needs assessment also demonstrate that more than 80% of OHS certificate holders would take a diploma or degree program if it were available. Employers also agree that a more advanced level of learning in OHS is needed as indicated by the high percentages who identify managers as an important audience for OHS. Employers are also concerned with liability issues and the lack of standards and quality control in the OHS education and training system. A diploma program could address these concerns.

Post-Degree Certificate or Major Specialization Level

It is also suggested that advanced university level programming be investigated that focuses on higher-level OHS management education. The needs assessment results illustrate that systemic management of OHS was lacking in many workplaces and that managers who could design, develop and implement comprehensive OHS systems that respond to the complexities of 21st-century workplace health and safety are lacking.

If a university department such as the College of Commerce or Administration was interested in pursuing a post-degree certificate or a major/specialization in OHS at the degree level, there are several possible courses that would meet the needs of the OHS system. Based on university programming offered in other jurisdictions, the courses that may be most feasible at the appropriate academic level and multi-disciplinary are:

- Business Ethics and Corporate Responsibility (Humanities)

- OHS Law and Statutory Obligations (Faculty of Law)
- Management of Safety Systems (Faculty of Commerce - Administration)
- Safety Management, Risk Assessment and Quality Auditing (Faculty of Commerce - Accounting)
- Evaluation of Safety Systems
- Managing Disability
- Work Environment (Faculties of Engineering, Kinesiology, Medicine, Adult Education)

An additional programming alternative that could be considered is to create courses for senior management that could be delivered via special intensive executive workshops.

Benefits of a Model OHS Career Pathway

- This model would connect industry-based training with academic programs.
- It would fill all the curricula gaps including management and supervision of OHS systems and specialized courses related to current workplace health issues that are escalating.
- It would establish the first career rung on the OHS career ladder, the applied certificate, that would greatly benefit new entrants into the OHS field and also benefit those who to date have only work-based credentials.
- It would provide alternatives for experienced OHS practitioners, such as those who hold the OHS university certificate, to expand their knowledge and skills and prepare for management OHS credentials.
- It would lay the framework for the development of a system of standards and quality controls for the preparation of OHS practitioners.
- It would create a barrier-free career ladder from work-based trainers to practitioners with post-degree certificate/specializations.
- The long-term result would be much improved workplace OHS systems and less health and injury time loss claims.

Issues for Advisory Group Discussion

To implement a model OHS career pathway, a number of issues need to be addressed to determine its feasibility.

- Will SIAST agree to invest in the development and delivery of an applied certificate and establish recognition of prior learning assessment system for OHS?
- Will safety associations, private safety vendors and other stakeholders in OHS support the principle of an applied certificate and work with SIAST as a development partner?
- Will the universities agree to accept the SIAST program as the first year toward an OHS diploma?
- Will the universities agree to phase out the University of Alberta certificate and create an OHS diploma and relevant courses?
- Will a university department at one of the universities agree to act as the program home for OHS?
- Or will a department at one of the universities agree to act as program home for a post-degree certificate/major specialization or deliverer of OHS?

Invest in OHS Curricula Development
The results of the needs assessment point to the necessity of strengthening the OHS university certificate program curriculum. Revisions of courses currently offered and new course development needs to be undertaken. See Table 3 of the Appendix.

Strengthen OHS Practitioners' Association
Consideration should be given to investigate the potential for strengthening an OHS practitioners' association that would become a stronger voice for those working in OHS. The Canadian Society of Safety Engineering (CSSE) has active chapters in the province. The CSSE's goals are to promote the science of OHS and act as the leading organization for loss prevention specialists. Its members are mainly human resource professionals, engineers, CRSPs and graduates of the Certified Health and Safety Certificate. Currently, OHS practitioners who do not hold formal credentials are not represented by an OHS organization. A broader based organization that could reach out to all OHS practitioners may provide benefits to OHS practice. Such an association could assist in the ongoing development of OHS practice. Typically, employee associations take responsibility for identifying the core competencies necessary for practicing in the field, as well as defining competencies on the continuum of practice from novice to expert. Other functions may involve advocacy regarding credentialing and promoting the OHS field.

Implement Collaborative Initiatives
The needs assessment identifies the potential for several collaborative initiatives involving the OHS system stakeholders that require investigation and discussion. A number of the suggestions involve creating a higher degree of integration among all the OHS organizations and stakeholders.

Creating partnerships to develop courseware that can be shared across the system and establishing an information clearinghouse via an expanded website to assist all training providers provide quality services are two initiatives that may be feasible. Creating strategies that will increase the effectiveness of Occupational Health Committees should also be examined.

Building Capacity in OHS Advisory Group Response to the Needs Assessment
In June 2003 an entire meeting of the Advisory Group was devoted to a discussion of the suggested recommendations emanating from the needs assessment.

The Advisory Group decided to focus on the development of a more integrated OHS career pathway for the benefit of the many different types of practitioners in Saskatchewan. The need to bridge the gap between practitioners possessing only industry-based credentials or work-based experience was considered to be of greatest importance. It was agreed that a SIAST applied certificate program featuring the recognition of prior learning component would be the best alternative.

In fall 2003 SIAST began the development of the OHS Practitioner Program.

The Advisory Group focused on implementing this recommendation during 2003 and then revisited the other collaborative and communications strategies in 2004.

9.0 Results of the Building Capacity in OHS Sector Partnership

1. Development of the OHS Practitioner's Program

Program Description

SIAST Occupational Health and Safety Practitioner Applied Certificate Program
In October, 2003 development started for a new program, based on the extensive consultation and collaboration from representatives in industry, labour, government and education documented in this project needs assessment. In February, 2004 SIAST approved a new applied certificate program with six courses and a total of 17 credit units (256 hours of instruction). Development of the program continued until March 2005 with content designed to meet Saskatchewan needs.

The following curriculum was produced from the funding of this project:

- Detailed course outlines and course materials for students;
- Additional course materials for instructors in instructor manuals;
- All course assessment instruments;
- PLAR assessment instruments and process (using $13,000 from SIAST PLAR fund).

These are included in the appendices of this report.

The program is comprised of the following six courses:

EDUC 182	Principles and Practices of Adult Learning
HLTH 180	Risk Analysis and Hazard Control
HLTH 181	Occupational Health and Safety Programming
PCOM 180	Communication Strategies
PRAC 189	Practicum
SFTY 191	Safety Systems

EDUC 182 - Principles and Practices of Adult Learning
Credit Units: 3.00
Pre-requisites - HLTH 181 and PCOM 180
Using the principles of adult learning, your studies will focus on the characteristics of adult learners and approaches to use while educating them in occupational health and safety concepts. Developing a professional portfolio will support you in creating a personal continuing education plan for occupational health and safety.

HLTH 180 - Risk Analysis and Hazard Control
Credit Units: 3.00
Pre-requisite - SFTY 191
Organizational culture and behaviour directly impact the effectiveness of an occupational health and safety system. Your studies will focus on corporate culture, organization behaviour, risk analysis and hazard identification. Critical thinking skills, problem solving abilities, monitoring strategies and control recommendations will be emphasized.

HLTH 181 - Occupational Health and Safety Programming
Credit Units: 3.00
Pre-requisite: HLTH 180
You will learn how to develop an organizational health and safety program and manual. Opportunity to practice evaluating, revising and implementing guidelines and programs will enhance your ability to determine prevention strategies and corrective action plans.

PCOM 180 - Communication Strategies
Credit Units: 3.00
You will examine interpersonal communication theory and its application in the workplace (including conflict resolution, teamwork and positive political skills). You will develop research and report writing skills and practice conducting a meeting and resolving conflict.

PRAC 189 - Practicum
Credit Units: 2.00
Pre-requisite: EDUC 182
You will preceptor with an occupational health and safety professional. This experience will allow you to apply the theory and skills you learned in previous courses in a work environment.

SFTY 191 - Safety Systems
Credit Units: 3.00
Your studies will focus on an overview of occupational health and safety systems. You will examine societal and organizational aspects, core principles, essential elements and a variety of legislation.

Further information about the program can be found on the SIAST web-site at:
http://www.siast.sk.ca/siast/educationtraining/appliedcertificate/healthapplied/ohspractioner.htm

Delivery Methods
The program was developed for on-site instructor lead to begin and with plans to develop distance education delivery options both in print/correspondence and on-line.

Although not part of this project in terms of funding, SIAST was able to offer a pilot program using the newly developed materials. This pilot program was very successful. It was delivered as a full time day offering at Kelsey Campus from Nov 16, 2004 until Jan 31, 2005. Twenty students registered in the program. Seven students received a *Program Award* from Sask Labour that covered the cost of their tuition. Nineteen students successfully completed on Jan 31, 2005. One student was required by his employer to return to his workplace in northern Saskatchewan in December and is being assisted by SIAST to complete the program through distance delivery mode. It is anticipated that he will complete on April 1, 2005. This is an amazing 100% completion rate which is a testimony to the ability of the students, the high quality of the course materials, and the excellence of the instructor, Lynn Sheridan. Student evaluation of the courses has been very positive.

The demographics of the pilot program student group are varied. Students come from all parts of Saskatchewan both rural and urban (Coronach to Laloche, Lloydminister to Esterhazy). Six of the students come from Saskatoon and Regina. The majority of the students are from small centres and rural Saskatchewan, and three students were Aboriginal.

The occupations of the students in this group are very diverse. Some of the occupations include:

- Farming
- Meat processing
- Health care
- Heavy equipment
- Mining
- Education
- RCMP
- Firefighter

PLAR and Transfer Credit

Industry was particularly interested in students being given recognition for previous learning and experience. Prior Learning Assessment and Recognition (PLAR) have been developed for all courses and the entire program. Eligible students are able to access PLAR information on-line or through student services at any SIAST campus. PLAR applications will be accepted twice a year.

Students who successfully complete the SIAST Occupational Health and Safety Practitioner applied certificate are also eligible to use these courses towards the points required to apply for the CRSP designation from the Canadian Registered Safety Professionals.

In terms of transfer credit, the program head (working with existing SIAST policy and systems) initiated efforts to maximize laddering or credit transfer among potential providers. This included a draft agreement with Sask Labour (for its OHS training) and also negotiations with University of Alberta with its occupational health and safety program that is brokered by the University of Saskatchewan and University of Regina. As well, the program head plans to begin contacting other post-secondary institutions in Canada (e.g., British Columbia Institute of Technology, University of New Brunswick, and Ryerson Polytechnic Institute) to work out transfer credit arrangements.

Future Plans

The plan for 05/06 is to offer a full time day program offering at Kelsey Campus. In addition, offerings will be given for weekend/evening delivery at Kelsey Campus in Saskatoon and Wascana Campus in Regina and distance delivery of the first two courses in the program (SFTY 191 - Safety Systems and HLTH 180 - Risk Analysis and Hazard Control). Proposals have been submitted to Sask Learning TEL Fund for funding to develop in 06/07 the first two courses for on-line delivery.

Based on the initial response to the pilot program, there will be continued demand for this training all across Saskatchewan in a number of different training options including in-person day programs and distance education offerings.

2. Development of a Communications Strategy

Following the completion of the OHS Practitioner's Program the Advisory Group decided that the Building Capacity Sector Partnership should publicize the program and other accomplishments made to date. Subsequently a communications strategy was developed and a newsletter in print and electronic versions was produced. Eight hundred copies of the newsletter were distributed by the Advisory Group members and electronic versions were posted on several websites.

A copy of the newsletter is attached in the appendices.

3. Development of a Web-Based OHS Directory

The needs assessment demonstrated that many OHS practitioners, OH Committees and employers wanted easy access to high quality OHS resources and information. The Advisory Group decided that a web-based OHS directory that served as a guide to OHS resources and education and training opportunities would be helpful. A compendium of the best available websites covering provincial, national and global organizations was developed. The directory was posted on *Worksafe* and Advisory group members have posted the *Worksafe* link on their sites.

A copy of the directory is attached in the appendices.

4. Youth Environmental Scan

In February the Saskatchewan Program Research and Development Unit of the Saskatchewan Teachers Federation completed an environmental scan of youth exposure to occupational health and safety. The report titled *Youth and OHS Education and Training Program* identified several opportunities for improving OHS youth programming.

10.0 Next Steps

In November 2004 a sustainability plan for the Building Capacity OHS Sector Partnership was prepared and circulated to the Advisory Group. In February 2005 the Advisory Group discussed next steps for the OHS Sector partnership and concluded that all the work necessary to create a fully integrated OHS career pathway had not yet been completed. Specific gaps remain.

- The SIAST OHS Practitioner's Program is not fully articulated with other academic and industry credentials.
- The SIAST Prior Learning Assessment and Recognition system requires further enhancing to be fully supportive of those challenging for credit.
- Young people in the K-12 system and those entering the workforce for the first time need further opportunities for OHS education and training.
- Management and owners have significant responsibilities for developing and implementing workplace safety systems. The needs assessment revealed that in Saskatchewan post-secondary education programs provide a very limited number of courses and programs that teach the next generation of managers these responsibilities. Some discussions were held with the University of Saskatchewan, College of Commerce regarding the development of new programming; however, this did not bear many results. The Advisory Group is considering additional means and methods for advancing owners, supervisors, and managers OHS knowledge.
- The Advisory Group is also concerned that OHS programming is concentrated in Regina and Saskatoon and is discussing ways to expand regional delivery of OHS programs.
- The Advisory Group has also noted that improvements in OHS opportunities for other more difficult to reach audiences such as Aboriginal youth and Aboriginal employers need to be developed.
- An OHS registry of practitioners has been discussed at the Advisory Group table. Some members of the Advisory Group are considering taking on the task of developing such a registry.

As a result of the above discussions, the Building Capacity in OHS Sector Partnership will submit a concept proposal to Saskatchewan Learning for a second phase of initiatives that will address remaining gaps in OHS programming.